



# **Hazardous Materials Placarding Requirements**

**HMSAT**

**Field Operations**

**<http://phmsa.dot.gov/hazmat>**

**Month/Year**



## Objectives

- **DETERMINE** proper PLACARDING requirements for non bulk and bulk shipments.
- **IDENTIFY** special PLACARDING provisions.
- **IDENTIFY** some critical PLACARDING exceptions.



# Why Placard?



- Hazard Communication
- Response Mitigation
- Regulatory Requirement



# Placarding – Part 172, Subpart F

Each person who offers or transports hazardous materials must comply with the placarding requirements.







# Placarding Requirements

Placarding requirements ***do not*** apply to:

- Small quantities of certain hazard classes
- Limited quantities
- Infectious substances
- Other regulated material (ORM-Ds)
- Combustible liquids in non-bulk packagings
- Materials prepared in accordance with §173.13



## Prohibited Placarding

Placards ***may not*** be displayed on a transport vehicle, portable tank, or freight container ***unless***:

- Transported material is a hazardous material
- Placarding represents a hazard of the material
- Placarding conforms to the regulations





# General Placarding Requirements

## Placard a container or vehicle:

- on each side and each end
- for any quantity of hazardous material

## Some exceptions exist based on:

- the hazard and quantity present





## ID Numbers

ID Numbers may be placed on placards, However this is a “MARKING” Requirement.

Conditions are found in Section 172.332 – 172.338



- Placed on Placard
- Orange Panel
- White Square on Point







# When ID Numbers Must Be Used

- **Non-Bulk Packages if:**
  - 8,882 LBS of a Single Commodity, loaded at one facility, containing no other materials.
  - Except:
    - Class 1, 7, or any other material not requiring ID #s.
    - Small quantities, LTD QTY's, Combustibles, etc.
- **Bulk Packages: (all)**
  - 4 Sides if > 1,000 Gallons
  - 2 Sides if < 1,000 Gallons



## Non-Bulk Examples





# Bulk Examples

> 1000 Gallons  
4 Sides



< 1000 Gallons  
2 Sides





# Placarding Tables

## Placarding Tables 172.504 (e)

TABLE 1

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.1 .....	EXPLOSIVES 1.1 .....	172.522
1.2 .....	EXPLOSIVES 1.2 .....	172.522
1.3 .....	EXPLOSIVES 1.3 .....	172.522
2.3 .....	POISON GAS .....	172.540
4.3 .....	DANGEROUS WHEN WET .....	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE .....	172.552
6.1 (material poisonous by inhalation (see § 171.8 of this subchapter)).	POISON INHALATION HAZARD .....	172.555
7 (Radioactive Yellow III label only) .....	RADIOACTIVE <sup>1</sup> .....	172.556

<sup>1</sup> RADIOACTIVE placard also required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with § 173.427(b)(4) and (5) or (c) of this subchapter.

TABLE 2

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.4 .....	EXPLOSIVES 1.4 .....	172.523
1.5 .....	EXPLOSIVES 1.5 .....	172.524
1.6 .....	EXPLOSIVES 1.6 .....	172.525
2.1 .....	FLAMMABLE GAS .....	172.532
2.2 .....	NON-FLAMMABLE GAS .....	172.528
3 .....	FLAMMABLE .....	172.542
Combustible liquid .....	COMBUSTIBLE .....	172.544
4.1 .....	FLAMMABLE SOLID .....	172.546
4.2 .....	SPONTANEOUSLY COMBUSTIBLE .....	172.547
5.1 .....	OXIDIZER .....	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE .....	172.552
6.1 (other than material poisonous by inhalation) .....	POISON .....	172.554
6.2 .....	(None) .....	.....
8 .....	CORROSIVE .....	172.558
9 .....	Class 9 (see § 172.504(f)(9)) .....	172.560
ORM-D .....	(None) .....	.....





## Table 1 – Placard Any Quantity

Note specifics for Division 5.2, 6.1 and Class 7

TABLE 1

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.1 .....	EXPLOSIVES 1.1 .....	172.522
1.2 .....	EXPLOSIVES 1.2 .....	172.522
1.3 .....	EXPLOSIVES 1.3 .....	172.522
2.3 .....	POISON GAS .....	172.540
4.3 .....	DANGEROUS WHEN WET .....	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE .....	172.552
6.1 (material poisonous by inhalation (see § 171.8 of this subchapter)).	POISON INHALATION HAZARD .....	172.555
7 (Radioactive Yellow III label only) .....	RADIOACTIVE <sup>1</sup> .....	172.556

<sup>1</sup> RADIOACTIVE placard also required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with § 173.427(b)(4) and (5) or (c) of this subchapter.

4.3 .....

5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).

6.1 (material poisonous by inhalation (see § 171.8 of this subchapter)).

7 (Radioactive Yellow III label only) .....


§172.504(a)



## Placard for Table 2 Materials (unless excepted)

454 kg (1,001 lbs.) aggregate gross weight or more must be placarded

TABLE 2		
Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.4	EXPLOSIVES 1.4	172.523
1.5	EXPLOSIVES 1.5	172.524
1.6	EXPLOSIVES 1.6	172.525
2.1	FLAMMABLE GAS	172.532
2.2	NON-FLAMMABLE GAS	172.528
3	FLAMMABLE	172.542
Combustible liquid	COMBUSTIBLE	172.544
4.1	FLAMMABLE SOLID	172.546
4.2	SPONTANEOUSLY COMBUSTIBLE	172.547
5.1	OXIDIZER	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (other than material poisonous by inhalation)	POISON	172.554
6.2	(None)	
8	CORROSIVE	172.558
9	Class 9 (see § 172.559)	172.560
ORM-D	(None)	



§172.504(a)



## Table 2 Exceptions

Less than 454 kg (1,001 lbs.) aggregate gross weight  
may be placarded, but is not required

TABLE 2

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.4 .....	EXPLOSIVES 1.4 .....	172.523
1.5 .....	EXPLOSIVES 1.5 .....	172.524
1.6 .....	EXPLOSIVES 1.6 .....	172.525
2.1 .....	FLAMMABLE GAS .....	172.532
2.2 .....	NON-FLAMMABLE GAS .....	172.528
3 .....	FLAMMABLE .....	172.542
Combustible liquid .....	COMBUSTIBLE .....	172.544
4.1 .....	FLAMMABLE SOLID .....	172.546
4.2 .....	SPONTANEOUSLY COMBUSTIBLE .....	172.547
5.1 .....	OXIDIZER .....	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled) .....	ORGANIC PEROXIDE .....	172.552
6.1 (other than material poisonous by inhalation) .....	POISON .....	172.554
6.2 .....	(None) .....	.....
8 .....	CORROSIVE .....	172.558
9 .....	Class 9 (see § 172.504(f)(9)) .....	172.560
ORM-D .....	(None) .....	.....

§172.504(c)



# Use of Dangerous Placard

The Dangerous Placard may be used if the shipment contains non-bulk packages of two or more classes, requiring different placards from Table 2.



§172.504(b)





# Exceptions for Dangerous Placard



**May be used when:**

1. 2 or more hazardous materials
2. Only Table 2 items
3. Non-Bulk Packages
4. < 2,205lbs. Aggregate gross weight loaded at one facility

**49CFR 172.504(b)**

**Domestic Use Only!!!**



# Dangerous Placard Exception

**MUST** placard for hazard when:

- > 2,205 lbs or more of one class from Table 2
- Loaded at multiple facilities
- Can not use Dangerous Placard in these situations



§172.504(b)



## Dangerous Placard is NOT allowed for Table 1

TABLE 1		
Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.1 .....	EXPLOSIVES 1.1 .....	172.522
1.2 .....	EXPLOSIVES 1.2 .....	172.522
1.3 .....	EXPLOSIVES 1.3 .....	172.522
2.3 .....	POISON GAS .....	172.540
4.3 .....	DANGEROUS WHEN WET .....	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE .....	172.552
6.1 (material poisonous by inhalation (see § 172.101 of this subchapter)).	POISON INHALATION HAZARD .....	172.555
7 (Radioactive Yellow III label only) .....	RADIOACTIVE YELLOW III .....	172.556

<sup>1</sup> RADIOACTIVE placard also requires specific activity material and surface contaminated objects transported in accordance with § 172.101 of this subchapter.



§172.504(b)



# Subsidiary Placards

49 CFR only requires placards for three subsidiary hazards:

- Poison inhalation
- Uranium hexafluoride
- Dangerous when wet



**Internationally if you must label you must placard!  
No Exceptions**





# Subsidiary Placards

## Remember!

Subsidiary hazards may be placarded.





## Subsidiary Placards

Primary and subsidiary placards must display their appropriate class or division number.





# Prohibited Placarding

**No person may display a placard on a transport unit unless:**

- Commodity is a hazardous material
- Placard represents the hazard
- Placard conforms w/ 49 CFR  
(Unless placarded IAW the IMDG  
Code or TDG)





# WARNING

The following exceptions pertain to U.S. Federal Regulations. Some may not be suitable for international commerce.





# Exceptions Limited Quantities

Not required to be placarded





## Exceptions Explosives

When more than one division of Class 1 Materials are shipped together, only the placard for the lowest division need be displayed.

Cite: 49CFR 172.504(f)(1)

**Example-**





# Explosives

## 49 CFR 172.504(g)

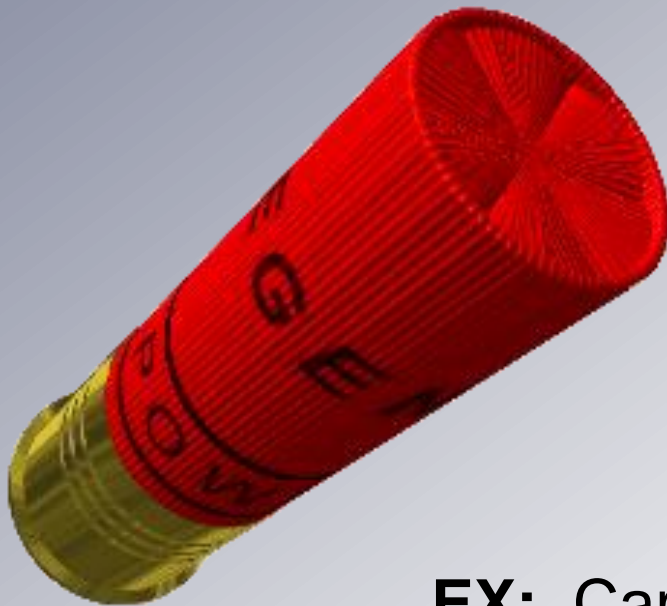
Class 1 materials shipped by vessels must have the compatibility group letter displayed.





# Exceptions Division 1.4S

49 CFR 172.504(f)(6)



No required label means no required placard.

**EX:** Cartridges for Small Arms

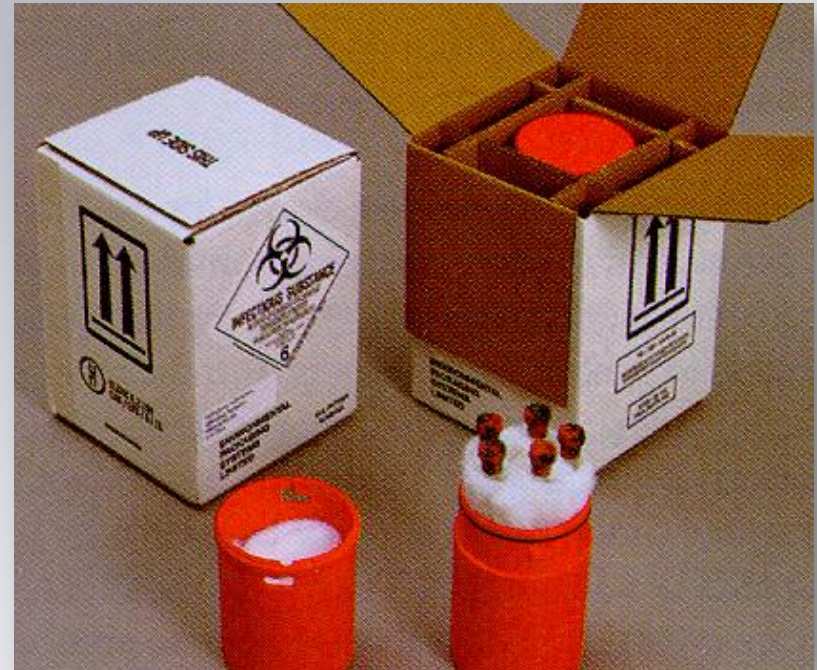




## Placarding Exceptions

The following are excepted from the placard requirements:

- Domestically Division 6.2 Infectious Substances (Placard required for International Shipment)
- Limited Quantities
- Small Quantities
- ORM-D
- Combustible Liquids in Non-Bulk Packaging



**49CFR 172.500(b)**

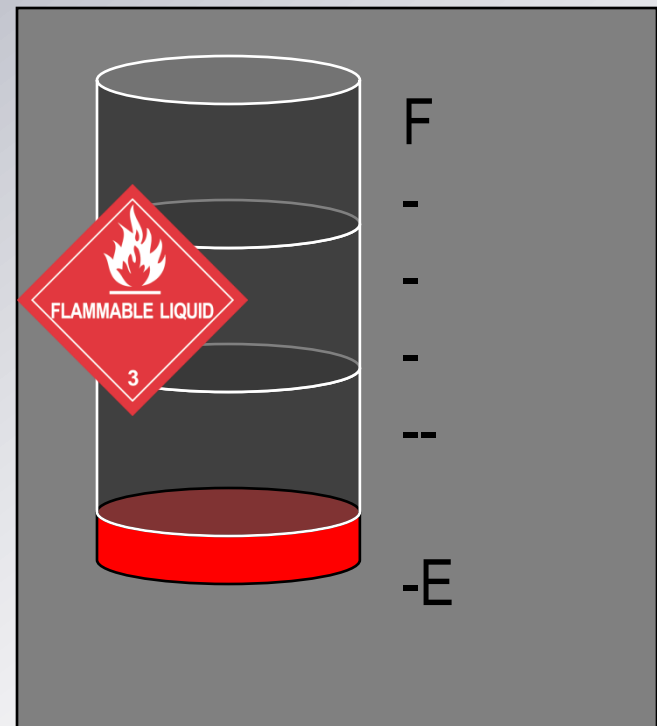


## Exceptions Residues

### 49CFR 172.504(d)

#### Placards not required domestically when:

- Non-bulk packages contain residue of a table 2 commodity.
- Internationally, packages containing residue shall be treated the same as when full unless steps have been taken to nullify the hazard.
- Bulk Packages must remain placarded





## Exceptions Combustible Liquids

FLAMMABLE placard may be used in place of a COMBUSTIBLE placard on cargo tanks, portable tanks and tanks only.



**49 CFR 172.504(f)(2)(i)**



## Oxygen Exception Residues



**Requires Text  
Unless UN ID  
Number is  
Displayed**



**49 CFR 172.504(f)(7)**

**May use the Oxygen Placard for domestic shipment only**





## Exceptions Class 9

**Not required to be placarded when shipping Domestically**

### **Note:**

Bulk shipments must still be marked with the UN number.



**49CFR 172.504(f)(9)**



## Exceptions Division 6.1

For domestic shipments, text may be modified as shown on a Toxic material assigned to PG III



**49CFR 172.504(f)(10)**



## REMEMBER!!!

- The majority of these exceptions are for **Domestic Transportation Only**.
- International regulations may require placards or may not allow certain modifications.



# Display of Placards

## 49CFR 172.516(c)

- Must be securely attached
- On each side and each end
- Located clear of devices such as ladders, pipes, doors, etc..







## Display of Placards

- Away from marking which could reduce the effectiveness
- Displayed horizontally, reading from left to right.













# Placard Specifications

## Placards must be:

- Able to withstand 30 day exposure to the elements
- Designed IAW 49 CFR 172.519
- Must measure at LEAST 250mm x 250mm (9.84 inches) by 49 CFR

**Note:** Regulations allow use of International placards and may be used in most situations.

Domestically Bulk Packages containing “Inhalation Hazards”  
Domestic placard must be used.

49 CFR 172.504 (f)



# Placarding Empty or Unpurged Tanks

**Tanks remain placarded unless:**

- Cleaned and purged
- Reloaded with a non-hazardous material
- Another class of hazardous material





## Visibility

- Each placard must be readily visible from the direction it faces
- Placards must be on each side and each end
- If coupled to another motor vehicle or rail car, visibility is not required from the direction it faces





# Attaching Placards

- Attach securely
- Maintain in good condition
- Clear of advertising, dirt and water, and tarps, etc.
- Printed and displayed horizontally

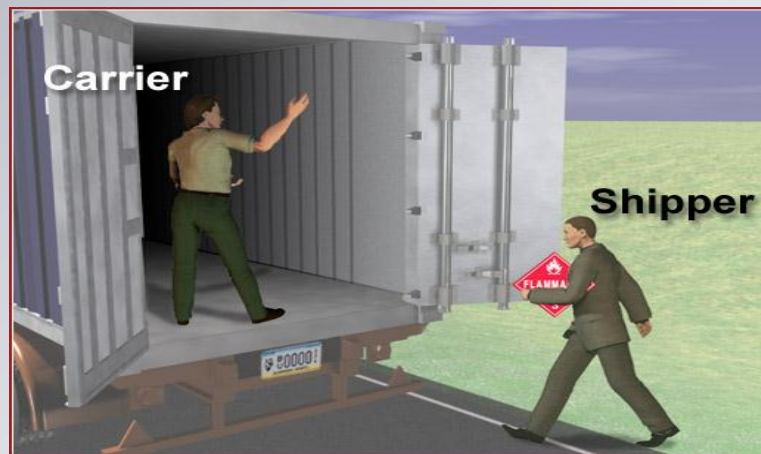






# Placarding – A Joint Responsibility

- It is the responsibility of shipper or carrier to make sure the correct placards are offered or affixed
- Since placarding is complex and crucial, do not rely solely on the information in this presentation
- Use the HMR and remember to refer to both placarding Table 1 and Table 2 and the exceptions in 172.504(f)





# Where to Find More Information...

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# Hazardous Material Info-Center

1-800-HMR-4922

(1-800-467-4922)

**E-mail: [infocntr@dot.gov](mailto:infocntr@dot.gov)**

**Hours of Operation: 9 am – 5 pm ET**



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